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U S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTORNEY'S DOCKET NUMBER
TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371	1454.1089 09/937347

INTERNATIONAL APPLICATION NO.	INTERNATIONAL FILING DATE	PRIORITY DATE CLAIMED
PCT/DE00/00610	March 1, 2000	March 23, 1999

TITLE OF INVENTION
METHOD AND DEVICE FOR INSTALLING AND METHOD AND DEVICE FOR INSTALLING AND OPERATING A SERVICE REQUESTED BY A USER COMPUTER

APPLICANT(S) FOR DO/EO/US
Bernhard BAUER et al.

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. [X] This is a FIRST submission of items concerning a filing under 35 U.S.C. 371.
2. [X] This is an express request to immediately begin national examination procedures (35 U.S.C. 371(f)).
3. [X] The US has been elected by the expiration of 19 months from the priority date (PCT Article 31).
4. [X] A copy of the International Application as filed (35 U.S.C. 371(c)(2))
   a. [X] is transmitted herewith (required only if not transmitted by the International Bureau).
   b. [ ] has been transmitted by the International Bureau.
   c. [ ] is not required, as the application was filed in the United States Receiving Office (RO/US).
5. [X] A translation of the International Application into English (35 U.S.C. 371(c)(2)).
6. [ ] Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))
   a. [ ] are transmitted herewith (required only if not transmitted by the International Bureau).
   b. [ ] have been transmitted by the International Bureau.
   c. [ ] is not required, as the application was filed in the United States Receiving Office (RO/US)
7. [ ] A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
8. [X] An oath or declaration of the inventor (35 U.S.C. 371(c)(4)).
9. [X] A translation of the Annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 10-15 below concern document(s) or information included:

10. [ ] An Information Disclosure Statement Under 37 CFR 1.97 and 1.98.
11. [X] An assignment document for recording.
    Please mail the recorded assignment document to:
    a. [X] the person whose signature, name & address appears at the bottom of this document.
    b. [ ] the following:
12. [X] A preliminary amendment.
13. [X] A substitute specification
14. [ ] A change of power of attorney and/or address letter.
15. [X] Other items or information:
    International Search Report, Translated abstract from published International Application, Letter to the Examiner Approval of the Changes to the Drawings.
    Information Disclosure Statement will be filed later.

[X] The U.S. National Fee (35 U.S.C. 371(c)(1)) and other fees as follows:

CLAIMS	(1) FOR	(2) NUMBER FILED	(3) NUMBER EXTRA	(4) RATE	(5) CALCULATIONS
	TOTAL CLAIMS	24 -20=	4	x $ 18.00	72.00
	INDEPENDENT CLAIMS	4 -3=	1	x $ 80.00	80.00
	MULTIPLE DEPENDENT CLAIM(S) (if applicable)			+$270.00	0.00
	BASIC NATIONAL FEE (37 CFR 1.492(a)(1)-(4): [ ] Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO .....$1,000 [X] International preliminary examination fee (37 C.F.R. 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO.. .....$ 860 [ ] International preliminary examination fee (37 C.F.R. 1.482) not paid to USPTO but international search fee (37 C.F.R. 1.445(a)(2) paid to USPTO.....$ 710 [ ] International preliminary examination fee paid to USPTO (37 CFR 1.482) but all claims did not satisfy provision of PCT Article 33(1)-(4).....$ 690 [ ] International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(2) to (4) .....$ 100				860.00
	Surcharge of $130 for furnishing the National fee or oath or declaration later than [ ] 20 [] 30 mos. from the earliest claimed priority date (37 CFR 1.482(e)).				
			TOTAL OF ABOVE CALCULATIONS		1,012.00
	Reduction by 1/2 for filing by small entity, if applicable. Affidavit must be filed also. (Note 37 CFR 1.9, 1.27, 1.28.)				
			SUBTOTAL		1,012.00
	Processing fee of $130 for furnishing the English Translation later than [ ] 20 [ ] 30 mos. from the earliest claimed priority date (37 CFR 1.482(f)).				
			TOTAL NATIONAL FEE		1,012.00
	Fee for recording the enclosed assignment (37 CFR 1.21(h)).				+40.00
			TOTAL FEES ENCLOSED		1,052.00

a. [X] A check in the amount of $1,052.00 to cover the above fees is enclosed.

b. [ ] Please charge my Deposit Account No. 19-3935 in the Amount of $ to cover the above fees. A duplicate copy of this sheet is enclosed.

c. [X] The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 19-3935. A duplicate copy of this sheet is enclosed.

21171

PATENT TRADEMARK OFFICE

Sept. 24, 2001
DATE

Mark J. Henry
NAME Mark J. Henry
REGISTRATION NO. 36,162

Docket No.: 1454.1089

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:

Bernhard BAUER et al.

Serial No. NEW — Group Art Unit: To be assigned

Confirmation No.

Filed: September 24, 2001 — Examiner: To be assigned

For: METHOD AND DEVICE FOR INSTALLING AND METHOD AND DEVICE FOR INSTALLING AND OPERATING A SERVICE REQUESTED BY A USER COMPUTER (As Amended)

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Before examination of the above-identified application, please amend the application as follows:

IN THE TITLE

Please amend the title as follows:

METHOD AND DEVICE FOR INSTALLING AND METHOD AND DEVICE FOR INSTALLING AND OPERATING A SERVICE REQUESTED BY A USER COMPUTER

IN THE ABSTRACT:

Please DELETE the Abstract in its entirety and substitute the attached new Abstract.

IN THE CLAIMS:

Please AMEND the pending claims and ADD new claims 15-24 in accordance with the following:

1. (ONCE AMENDED) A method for installation of a service, which comprises interface elements and user elements, on a user computer from a computer structure which has a first computer, which centrally manages the interface elements, and a second computer, which defines the user elements, comprising:

connecting the user computer and the computer structure;

transmitting interface elements to the user computer from the first computer after the user computer requests the service ; and

after transmitting interface elements to the user computer, transmitting from the first computer only the user elements of the service, such that user elements travel between the second computer and the user computer.

2. (ONCE AMENDED) A method for installation and for operation of a service, which comprises interface elements and user elements, on a user computer from a computer structure which has a first computer, which centrally manages the interface elements, and a second computer, which defines the user elements, comprising:

connecting the user computer and the computer structure ;

transmitting interfere elements to the user computer from the first computer after the user computer requests the service; and

during operation of the service, transmitting from the first computer only the user elements of the service, such that user elements travel between the second computer and the user computer.

3. (ONCE AMENDED) The method as claimed in claim 1, wherein Graphical User Interface (GUI) objects are transmitted as the interface elements.

4. (ONCE AMENDED) The method as claimed in claim 1, wherein the first computer is connected both to the user computer and to the second computer.

5. (ONCE AMENDED) The method as claimed in claim 1, wherein the user computer is a mobile telephone.

6. (ONCE AMENDED) The method as claimed in claim 1, wherein the user elements relate to traffic information.

7. (ONCE AMENDED) The method as claimed in claim 6, wherein the first computer is a Personal Travel Assistant.

8. (ONCE AMENDED) A device for installation of a service, which comprises interface elements and user elements, on a user computer from a computer structure which has a first computer to manage interface elements centrally, and a second computer to define the user elements, comprising:

a connection between the user computer and the computer structure;

a request unit at the user computer to request the service;

an interface transmission unit at the first computer to transmit the interface elements to the user computer; and

a user element transmission unit to transmit during operation of the service, only the user elements of the service, the user elements being transmitted between the second computer and the user computer.

9. (ONCE AMENDED) A device for installation and for operation of a service, which comprises interface elements and user elements, on a user computer from a computer structure which has a first computer to manage interface elements centrally, and a second computer to define the user elements, comprising:

a connection between the user computer and the computer structure;

a request unit at the user computer to request the service;

an interface transmission unit at the first computer to transmit the interface elements to the user computer; and

a user element transmission unit to transmit the user elements, and not substantially transmit the interface elements, after the interface transmission unit transmits the interface elements, the user elements being transmitted between the second computer and the user computer.

10. (ONCE AMENDED) A device as claimed in claim 8, wherein

the interface elements are Graphical User Interface (GUI) objects.

11. (ONCE AMENDED) A device as claimed in claim 8, wherein the first computer is connected both to the user computer and to the second computer.

12. (ONCE AMENDED) A device as claimed in claim 8, wherein the user computer is a mobile telephone.

13. (ONCE AMENDED) A device as claimed in claim 8, wherein the user elements relate to traffic information.

14. (ONCE AMENDED) The device as claimed in claim 13, wherein the first computer is a Personal Travel Assistant.

15. (NEW) The method as claimed in claim 2, wherein Graphical User Interface (GUI) objects are transmitted as the interface elements.

16. (NEW) The method as claimed in claim 15, wherein the first computer is connected both to the user computer and to the second computer.

17. (NEW) The method as claimed in claim 16, wherein the user computer is a mobile telephone.

18. (NEW) The method as claimed in claim 17, wherein the user elements relate to traffic information.

19. (NEW) A device as claimed in claim 9, wherein the interface elements are Graphical User Interface (GUI) objects.

20. (NEW) A device as claimed in claim 19, wherein the first computer is connected both to the user computer and to the second computer.

21. (NEW) The device as claimed in claim 20, wherein the user computer is a mobile telephone.

22. (NEW) A device as claimed in claim 21, wherein the user elements relate to traffic information.

23. (NEW) A device according to claim 8, wherein the interface elements are transmitted to the user computer after the request unit requests the service.

24. (NEW) A device according to claim 9, wherein the interface elements are transmitted to the user computer after the request unit requests the service.

REMARKS

This Preliminary Amendment is submitted to improve the form of the specification as originally-filed and to delete multiple dependent claims.

Also filed concurrently herewith is a Letter to the Examiner Requesting Approval of Changes to the Drawings.

It is respectfully requested that this Preliminary Amendment be entered in the above-referenced application.

If there are any additional fees associated with filing of this Preliminary Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

STAAS & HALSEY LLP

Date: Sept. 24, 2001

By: [signature]
Mark J. Henry
Registration No. 36,162

700 Eleventh Street, NW, Suite 500
Washington, D.C. 20001
(202) 434-1500

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Please AMEND the following claims:

1. (ONCE AMENDED) A method for installation of a service, which comprises interface elements and user elements, on a user computer[, and of] from a computer structure which has a first computer, which centrally manages the interface elements, and a second computer, which defines the user elements, comprising:

[- in which] connecting the user computer and the computer structure [are connected to one another,];

[- in which the service is installed in such a manner that] transmitting interface elements to the user computer from the first computer after the user computer requests the service[and the interface elements are transmitted from the first computer to the user computer,]; and

[- in which the first computer is then set up in such a manner that, during operation of the service, the first computer transmits] after transmitting interface elements to the user computer, transmitting from the first computer only the user elements of the service, such that user elements travel between the second computer and the user computer.

2. (ONCE AMENDED) A method for installation and for operation of a service, which comprises interface elements and user elements, on a user computer[, and of] from a computer structure which has a first computer, which centrally manages the interface elements, and a second computer, which defines the user elements, comprising:

[- in which] connecting the user computer and the computer structure[are connected to one another,];

[- in which the service is installed in such a manner that] transmitting interfere elements to the user computer from the first computer after the user computer requests the service[and the interface elements are transmitted from the first computer to the user computer,]; and

[- in which the first computer is then set up in such a manner that, during operation,] during operation of the service, transmitting from the first computer [transmits] only the user elements of the service, such that user elements travel between the second computer and the user computer[, and

- in which, during operation of the service, only the user elements are transmitted between the second computer and the user computer].

3. (ONCE AMENDED) The method as claimed in claim 1, [or 2, in which an interface element is a] wherein Graphical User Interface (GUI) objects are transmitted as the interface elements.

4. (ONCE AMENDED) The method as claimed in [one of claims 1 to 3] claim 1, wherein [in which] the first computer is connected both to the user computer and to the second computer.

5. (ONCE AMENDED) The method as claimed in [one of claims 1 to 4] claim 1, wherein [in which] the user computer is a mobile telephone.

6. (ONCE AMENDED) The method as claimed in [one of claims 1 to 5] claim 1, wherein the user elements relate to [used in a]traffic information[system].

7. (ONCE AMENDED) The method as claimed in claim 6, wherein the first computer is [used in] a Personal Travel Assistant [(PTA)].

8. (ONCE AMENDED) [An arrangement] A device for installation of a service, which comprises interface elements and user elements, on a user computer[, and of] from a computer structure which has a first computer[, which is set up in such a manner that the] to manage interface elements [can be managed] centrally, and a second computer[, which is set up in such a manner that] to define the user elements [can be defined], comprising:

[- in which] a connection between the user computer and the computer structure [are connected to one another,];

[- in which] a request unit at the user computer [is set up in such a manner that] to request the service[can be requested,];

[- in which] an interface transmission unit at the first computer [is set up in such a manner that] to transmit the interface elements [can be transmitted from the first computer] to the user computer[,]; and

[- in which] a user element transmission unit to transmit [the user computer can then be set up in such a manner that,] during operation of the service, only the user elements of the service, the user elements being [are] transmitted between the second computer and the user computer.

9. (ONCE AMENDED) [An arrangement] A device for installation and for operation of a service, which comprises interface elements and user elements, on a user computer[, and of] from a computer structure which has a first computer[, which is set up in such a manner that the] to manage interface elements [can be managed] centrally, and a second computer[, which is set up in such a manner that] to define the user elements [can be defined], comprising:

[- in which] a connection between the user computer and the computer structure [are connected to one another,];

[- in which] a request unit at the user computer [is set up in such a manner that] to request the service[can be requested,];

[- in which] an interface transmission unit at the first computer [is set up in such a manner that] to transmit the interface elements [can be transmitted from the first computer] to the user computer[,]; and

[- in which the user computer can then be set up in such a manner that, during operation of the service, only] a user element transmission unit to transmit the user elements, and not substantially transmit the interface elements, after the interface transmission unit transmits the interface elements, the user elements being [are] transmitted between the second computer and the user computer.

10. (ONCE AMENDED) [An arrangement] A device as claimed in claim 8[or 9], wherein [in which an] the interface elements [is a] are Graphical User Interface (GUI) objects.

11. (ONCE AMENDED) [An arrangement] A device as claimed in [one of claims 8 to 10] claim 8, wherein [in which] the first computer is connected both to the user computer and to the second computer.

12. (ONCE AMENDED) [The arrangement] A device as claimed in [one of claims 8 to 11] claim 8, wherein [in which] the user computer is a mobile telephone.

13. (ONCE AMENDED) [An arrangement] A device as claimed in [one of claims 8 to 12] claim 8, wherein the user elements relate to [used in a] traffic information [system].

14. (ONCE AMENDED) [The arrangement] The device as claimed in claim 13, wherein the first computer is [used in] a Personal Travel Assistant [(PTA)].

Please ADD the following claims:

15. (NEW) The method as claimed in claim 2, wherein Graphical User Interface (GUI) objects are transmitted as the interface elements.

16. (NEW) The method as claimed in claim 15, wherein the first computer is connected both to the user computer and to the second computer.

17. (NEW) The method as claimed in claim 16, wherein the user computer is a mobile telephone.

18. (NEW) The method as claimed in claim 17, wherein the user elements relate to traffic information .

19. (NEW) A device as claimed in claim 9, wherein the interface elements are Graphical User Interface (GUI) objects.

20. (NEW) A device as claimed in claim 19, wherein the first computer is connected both to the user computer and to the second computer.

21. (NEW) The device as claimed in claim 20, wherein the user computer is a mobile telephone.

22. (NEW) A device as claimed in claim 21, wherein the user elements relate to traffic information.

23. (NEW) A device according to claim 8, wherein the interface elements are transmitted to the user computer after the request unit requests the service.

24. (NEW) A device according to claim 9, wherein the interface elements are transmitted to the user computer after the request unit requests the service.

SUBSTITUTE ABSTRACT

In a method and a device for installation and for operation of a service, which is requested by a user computer and comprises interface elements and user elements, on the user computer and of a computer structure which has a first computer, which manages the interface elements, and a second computer, which defines the user elements, the user computer and the computer structure are connected to one another. The interface elements are then transmitted from the first computer to the user computer. The first computer is then set up in such a manner that the first computer transmits the user elements between the second computer and the user computer. During operation of the service, only the user elements are transmitted between the second computer and the user computer.

Description

Method and arrangement for installation, and a method and arrangement for installation and for operation, of a service requested by a user computer

The invention relates to a method and an arrangement for installation, and a method and an arrangement for installation and for operation, of a service, which is requested by a user computer and comprises interface elements and user elements, on the user computer, and of a computer structure.

In general, data is transmitted between computers that are connected to one another, in methods and arrangements such as these.

[1] discloses an arrangement for transmitting data between computers which are connected to one another.

The components of this arrangement are parts of a communications network, referred to as the World-Wide-Web (WWW).

The communications network connects individual computers to one another in such a manner that these computers can interchange data in accordance with a predetermined transmission protocol, the "Transmission Control Protocol (TCP)/Internet Protocol (IP)". In order to allow data to be processed in a standard manner, much of the data is in a standard format, referred to as the Hyper-Text-Markup-Language format (HTML format).

Furthermore, suitable software for processing the data, such as a WWW-Browser, is installed on each individual computer.

Data transmitted in such a way may comprise image data, text data or multimedia data.

Furthermore, data such as this can be transmitted as part of a service which a computer can request in the communications network. One such service is, for example, provision of information.

In this case, the computer which requests the service in the communications network is referred to as the user computer or client. A computer which provides a service or information in the communications network is referred to as a server. The server may also be a computer structure which comprises individual computers connected to one another.

Within a service, the client or user computer can request the service from the server or computer structure via the communications network. During operation of the service, data is transmitted between the client and the server via the communications network.

The transmitted data comprises interface elements and user elements.

The expression interface elements means data which is required for transmitting the user elements between two computers, for example data relating to the definition of an interface between the two computers, or for processing or displaying the user elements by means of a computer, for example formatting information.

The expression user elements means data containing only the information requested within the service. The user elements also include any control characters.

This known arrangement has the disadvantage that the information content of the data including both interface elements and user elements is low.

Furthermore, the known arrangement has, in particular, the disadvantage that the amount of data transmitted within a service may be so great that rapid information interchange between the corresponding service provider and the corresponding user is impossible.

Particularly when transmitting data using the HTML format, information, for example formatting information, is transmitted which is not required for the purposes of the request by the respective user.

The invention is thus based on the problem of specifying an arrangement for operation of a service on computers which are connected to one another, in which the amount of data which is transmitted within the service is comparatively small and can thus be transmitted quickly, and which arrangement is not subject to the disadvantages of the known arrangements.

Furthermore, the invention is based on the problem of specifying a method for operation of a service on computers which are connected to one another, in which the amount of data transmitted within the service is small, and the amount of data can thus be transmitted more quickly than when using known methods.

The problems are solved by the arrangements and the methods having the features specified in the independent claims.

In the case of a method for installation of a service, which is requested by a user computer and comprises interface elements and user elements, on the user computer, and of a computer structure, which has a first computer which manages the interface elements and a second computer which defines the user elements, the user computer and the computer structure are connected to one another. The interface elements are then

transmitted from the first computer to the user computer. The first computer is then

set up in such a manner that the first computer transmits the user elements between the second computer and the user computer.

In the case of a method for installation and for operation of a service, which is requested by a user computer and comprises interface elements and user elements, on the user computer, and of a computer structure, which has a first computer which manages the interface elements and a second computer which defines the user elements, the user computer and the computer structure are connected to one another. The interface elements are then transmitted from the first computer to the user computer. The first computer is then set up in such a manner that the first computer transmits the user elements between the second computer and the user computer. During operation of the service, only the user elements are transmitted between the second computer and the user computer.

In an arrangement for installation of a service, which is requested by a user computer and comprises interface elements and user elements, on the user computer, and of a computer structure which has a first computer, which is set up in such a manner that the interface elements can be managed, and has a second computer which is set up in such a manner that the user elements can be defined, the user computer and the computer structure are connected to one another. Furthermore, the first computer is set up in such a manner that the interface elements can be transmitted from the first computer to the user computer. The user computer can then be set up in such a manner that the user elements can be transmitted between the second computer and the user computer.

In an arrangement for installation and for operation of a service, which is requested by a user computer and

comprises interface elements and user elements, on the user computer, and of a computer structure which has a first computer, which is set up in such a manner that

the interface elements can be managed, and has a second computer which is set up in such a manner that the user elements can be defined, the user computer and the computer structure are connected to one another. Furthermore, the first computer is set up in such a manner that the interface elements can be transmitted from the first computer to the user computer. The user computer is then set up in such a manner that only the user elements can be transmitted between the second computer and the user computer.

The arrangements are particularly suitable for carrying out the methods according to the invention, or one of their developments which are explained in the following text.

The particular advantage of the invention is that only user elements are transmitted during operation of a service. This allows the maximum possible data transmission rate between computers which are connected to one another to be utilized extremely effectively.

This is possible in particular because, during the installation of a service, those interface elements which are associated with the service are transmitted to the user computer and are available there, for example by being stored in the user computer. Only the user elements are then transmitted to the user computer during operation of the services. The user elements can be processed using the interface elements which are available in the user computer.

The user elements include all the control characters.

Preferred developments of the invention can be found in the dependent claims.

An interface element is preferably what is referred to as a Graphical User Interface (GUI) object.

In one development, the first computer is connected both to the user computer and to the second computer. In a structure of computers which are connected to one another such as this, the first computer carries out the function of a service administrator or service manager.

The user computer is preferably a mobile terminal, for example a mobile telephone. This also allows relatively large amounts of data, such as text data, to be transmitted to the mobile terminal.

In developments, methods and arrangements are used for an information system, for example a travel information system.

The methods and arrangements are preferably used for what is referred to as a Personal Travel Assistant (PTA). This makes it possible, within a service, to transmit to a user travel information such as a departure time or arrival time of some public transport, or a transport delay message.

One exemplary embodiment of the invention will be explained in more detail in the following text, and is illustrated in the figures, in which:

Figure 1 shows a structure for a service system in a communications network;

Figure 2 shows components of a service system in a communications network;

Figure 3 shows an example of a local GUI element;

Figure 4 shows a sketch describing processes during installation of the service system;

Figure 5 shows a sketch describing processes during operation of the service system.

Exemplary embodiment: Personal Travel Assistance (PTA)

Figure 1 shows, schematically, the structure of a service system 100 in a communications network 120 in which individual computers are connected by means of connections via which data can be transmitted.

The service system 100 illustrated in **Figure 1** is a travel information system, referred to as a **Personal Travel Assistance (PTA)**, by means of which various services, such as services for defining travel information, can be made available to a user. Such travel information may be, for example, a departure time and an arrival time of a traffic connection between two locations which may be selected freely by the user. Such information is referred to in the following text as user information.

The user is linked to the communications network 120 by means of a communication terminal 101, such as a telephone or a computer. A service manager is connected to the user via a first data line 102, which links the communication terminal 101 to a first computer 103. Data is transmitted via the first data line 102 between the communication terminal 101 and the first computer 103, or between the user and the manager in the communication network 120. Furthermore, the communication terminal 101 has a processor 112 and a memory 114, which is linked to the processor 112 via a bus 113. Suitable software for processing the transmitted data is stored in the memory 114. During data processing, the software is loaded from the memory 114, and is run by means of the processor 112. Furthermore, the communication terminal 101 has a screen 115 and an input keyboard or keypad 116. The screen 115 and the keyboard or keypad 116 are connected via a bus 117

to the processor 112 and to the memory 114 in such a manner that signals can be transmitted.

The first computer 103 likewise has a processor 104 and a memory 106 which is connected to the processor 104 via a bus 105. A service is managed in the communications network 120 by the manager or first computer 103, using software which is stored in the memory 106 and is run on the processor 104.

The manager is connected to a service provider in the communications network 120 via a second line 107, which connects the first computer 103 to a second computer 108. The second computer 108 likewise has a processor 109 and a memory 111, which is connected to the processor 109 via a bus 110.

Data is transmitted via the second data line 107 between the first computer 103 and the second computer 108, or between the manager and the service provider.

A service offered by the service provider, such as the provision of information in the communications network 120, is provided using software which is stored in the memory 111 of the second computer 108, and is run by the processor 109 in the second computer 108.

Figure 1 illustrates only one user 101 and one service provider 108, in order to illustrate the structure of the service system 100. This clearly shows that a service system may have a number of service providers, who each provide a service, which may itself comprise a number of individual services, in the communications network and are each connected via a data line to the manager. Likewise, a number of users,

who are each connected to the manager via a data line, can be included in the communications network 120. In this case, the first computer 103 or the manager in each case coordinates and monitors data transmission between one user and one service provider.

Functional and structural components of the service system 100 illustrated in **Figure 1** are described in more detail in the following text and figures.

The functional components are run as autonomous application programs or as programmed code in a higher-level application program.

Figure 2 shows components of the user or communication terminal 210, components of the manager or first computer 220 and components of the service provider or second computer 230.

The arrows shown in **Figure 2** each indicate a connection between two components, via which connection data can be transmitted. One arrow direction in each case indicates the direction in which data is transmitted between the two components.

Figure 2 shows the components of the user or communication terminal 210, referred to as local screen interface elements (locally Graphical User Interface (local GUI elements)) 211, what is referred to as a Graphical User Interface (GUI) - application 212, and what is referred to as a communication terminal interface (Device Interface Component (DIC)) 214.

In this case, the meanings of the components mentioned above are as follows:

Local GUI element 211: Local GUI elements 211 are screen interface elements which are managed by the manager or first computer 220 and are transmitted to the

communication terminal 210 during installation of the service system 200, and are then stored in the memory of the communication terminal 210. A local GUI element 211 is in each case associated with the service (job) which is offered within the service system 200. The local GUI elements 211 are managed by the GUI application 212.

Figure 3 shows such a local GUI element, an input mask 300, which can be displayed on the screen 213 of the communication terminal 210, and can be actioned by the user by means of the input keyboard or keypad 215.

The user uses the input mask 300 to define a job which he would like the service system 200 to carry out. To do this, the user specifies the job by entering details which describe the job into the communication terminal 210.

In the input mask 300 shown in **Figure 3**, the job, determination of a means of transport, is described by details comprising the locally and regionally preferred means of transport 301, 302, 303, the significance of travel costs 304, the importance of time 305, and personal details 306, 307.

Furthermore, the input mask 300 illustrated in **Figure 3** has what are referred to as control buttons 308, 309, 310, 311, 312, which are used to create the entry in the input mask 300.

GUI application 212: The GUI application 212 is an application program, for example an application program programmed in the programming language Java, which is stored in the memory of a communication terminal 210 and is run by the processor in the communication terminal 210. The GUI application 212 manages the local GUI elements 211. The user can use the GUI application

212 to request a service from the service system 200. In the process, the

GUI application 200 activates the local GUI elements 211 associated with that service.

DIC 213: The DIC 213 is an interface between the communication terminal 210 and the first computer 220, and is used for monitoring and carrying out the data interchange between the communication terminal 210 and the first computer 220. The DIC 213 communicates with a component in the manager 220, referred to as a User Management Component (UMC) 221, and a component of the manager 220, referred to as a User Component (UC) 223, and the GUI application 212 using defined protocols.

Furthermore, **Figure 2**, shows the components of the manager 220 and of the first computer 220, the UMC 221, the UC 223, what is referred to as a GUI directory 224, and what is referred to as a user directory 222.

In this case, the meanings of the components mentioned above are as follows:

User directory 222: The user directory 222 contains information about a user of the service system 200, or information about a number of users of the service system 200, which or who is or are authorized to use the service system 200. The information in each case includes, for example, a user name for a user, an associated password and a user profile. The user directory 222 and the UMC 221 are used to monitor access by a user to the service system 200.

UMC 221: The UMC 221 is required to register a user in the service system 200. The UMC 221 uses the user directory 222 to monitor a registration attempt by a user, and checks the access authorization of that user 210. If such a user has access authorization, the UMC 221 starts the UC 223. If a user

210 has no such authorization, the UCM 221 prevents the user from having access to the service system 200.

GUI directory 224: The GUI directory 224 contains information about screen interfaces for the services for the service system 200. This information in each case includes a name and an identification of the service, as well as the screen interface elements 225 associated with that service. The manager or first computer 220 manages the screen interface elements 225 using the GUI directory 224 and the UC 223.

UC 223: The UC 223 contains information about the individual services for the service system 200, and an association between screen interface elements 225 and the service.

Furthermore, **Figure 2** shows components of the service provider or of the second computer 230, referred to as service components DC 231.

In this case, the meanings of the components mentioned above are as follows:

DC 231: A DC 231 is in each case an application program, for example an application program programmed in the programming language Java, by means of which one service is in each case carried out in the service system. The DC 231 are stored in the memory of the second computer 230, and are each run by the processor in the second computer 230. One DC 231 is in each case activated by the UC 222.

The service provider 230 uses a DC 231 to define user information associated with a job defined by a user 210.

In the following text, **Figure 4** will be used to describe installation of the service system, and **Figure 5** will be used to describe operation of the

service system, and updating of the service system, in more detail.

Components from **Figure 4** and **Figure 5** are provided with the same reference symbols as in **Figure 2**, where they relate to the same configuration.

The arrows illustrated in **Figure 4** and **Figure 5** each indicate a connection between two components, via which connection data can be transmitted. One arrow direction in each case indicates the direction in which data is transmitted between the two components.

Installation of the service system (Figure 4)

The expression installation of the service system for a user relates to the procedures which are carried out before a service system is first used.

During the installation of the service system 400 for a user, the user or the communication terminal 410, the manager or first computer 420 and the service provider or second computer 430 are connected to one another via data lines 401, 402.

The data lines 401, 402 may be variable or fixed data lines, with fixed data lines being activated for data transmission during the installation process.

During the installation of the service system 400, the user requests a service from the service system 400 for the first time (initial registration). In the process, the user starts the GUI application 412. The GUI application transmits request data to the UMC 421.

During the installation process, which is monitored by the UMC 421, the user's initial registration is carried out by

storing information relating to the user in the user directory 422. In the process, the authorized services which the user can use in the service system 400 are defined. User access to an authorized service is protected by means of a password, which is stored in the user directory 422.

The UMC 421 starts the UC 423. The UC 423 uses the GUI directory 424 for the authorized services to determine the associated screen interface elements 425. The determined screen interface elements 425 are transmitted to the user or to the communication terminal 410, and are stored as local GUI elements 411 in the memory of the communication terminal 410.

Once these procedures have been carried out, the user or the communication terminal 410 is now set up so that only user information need be transmitted during operation of the service system.

Operation of the service system (Figure 5)

The expression operation of the service system by a user refers to the procedures which take place when using a service in the service system.

During operation of the service system 500, the user or the communication terminal 510, the manager or the first computer 520 and the service provider or the second computer 530 are connected to one another via data lines 501, 502.

The data lines 501, 502 may be variable or fixed data lines, which fixed data lines are activated for data transmission during operation.

During operation of the service system 500, the user requests a service from the service system 500 by starting the GUI application 512. The user uses the GUI application 512 to select a desired service. The local GUI elements 511 associated with that service are loaded from the memory of the communication terminal 510, and are displayed on the screen 513 of the communication terminal 510.

The user then registers for this service. In the process, data which includes a password for that user, is transmitted from the GUI application 512 via the DIC 514 to the UMC 521. The UMC 521 uses the user directory 522 to check the user's access authorization for the desired service. If the user has authorization, the UMC 521 starts the UC 523. The UC 523 activates the appropriate DC 531 for the service provider 530. If a user has no such authorization, the UCM 521 prevents that user from accessing the service provider 530.

Furthermore, the user defines a desired job by means of the loaded local screen interface elements 511, with the job data being determined.

If the user has authorization for that service, the job data is transmitted to the UC 523. The UC 523 transmits the job data on to the corresponding DC 531 of the service provider 530. The DC 531 uses the data to determine user information, and transmits the user information to the UC 523. The UC 523 transmits the user information on to the GUI application 512. The GUI application 512 displays the user information, using the loaded GUI elements 511, on the screen 513 of the communication terminal 510.

Updating of the service system

The service system is updated when a new service is available in the service system (new implementation) or an already available service is modified (update).

New implementation

When a service is newly implemented, a new DC is linked to the service system in a corresponding manner to the already existing DCs. New screen interface elements associated with the new service are stored in the GUI directory. The GUI directory and the UC are matched to one another as appropriate.

The user directory and the UMC are matched to the new service, in terms of the user's access authorization.

Furthermore, during user registration, the user is informed by the manager that the new service is available in the service system. In a corresponding manner to the installation of the service system, the new screen interface elements associated with the new service are transmitted to the user or to the communication terminal, and are stored as new local GUI elements in the memory of that communication terminal. The GUI application is adapted as appropriate.

Once these procedures have been carried out, the user can use the new service. The principle of the service system remains unchanged in the new implementation.

Update

When a service is updated, the old DC carrying out the service is replaced by an updated DC. The old screen interface elements which are associated with the old DC and

are managed by the manager are replaced by updated screen interface elements. The GUI directory and UC are adapted as appropriate.

Furthermore, during user registration, the user is informed by the manager that the updated service is available in the service system. In a corresponding manner to the installation of the service system, the updated screen interface elements associated with the updated service are transmitted to the user or to the communication terminal. The old local GUI elements associated with the old service are replaced by updated local GUI elements such that the updated screen interface elements are stored in the memory of the communication terminal as the updated local GUI element, instead of the old local GUI elements. The GUI application is adapted as appropriate.

Once these procedures have been carried out, the user can use the updated service. The principle of the service system remains unchanged in the update.

The following publication has been cited in this document:

[1] Principles of the World-Wide-Web (WWW) available on March 16, 1999, at: http://www.w3.org/

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Patent Claims:

1. A method for installation of a service, which comprises interface elements and user elements, on a user computer, and of a computer structure which has a first computer, which centrally manages the interface elements, and a second computer, which defines the user elements,
   - in which the user computer and the computer structure are connected to one another,
   - in which the service is installed in such a manner that the user computer requests the service and the interface elements are transmitted from the first computer to the user computer,
   - in which the first computer is then set up in such a manner that, during operation of the service, the first computer transmits only the user elements between the second computer and the user computer.

2. A method for installation and for operation of a service, which comprises interface elements and user elements, on a user computer, and of a computer structure which has a first computer, which centrally manages the interface elements, and a second computer, which defines the user elements,
   - in which the user computer and the computer structure are connected to one another,
   - in which the service is installed in such a manner that the user computer requests the service and the interface elements are

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transmitted from the first computer to the user computer,

- in which the first computer is then set up in such a manner that, during operation, the first computer transmits only the user elements between the second computer and the user computer, and
- in which, during operation of the service, only

the user elements are transmitted between the second computer and the user computer.

3. The method as claimed in claim 1 or 2, in which an interface element is a Graphical User Interface (GUI) object.

4. The method as claimed in one of claims 1 to 3, in which the first computer is connected both to the user computer and to the second computer.

5. The method as claimed in one of claims 1 to 4, in which the user computer is a mobile telephone.

6. The method as claimed in one of claims 1 to 5, used in a traffic information system.

7. The method as claimed in claim 6, used in a Personal Travel Assistant (PTA).

8. An arrangement for installation of a service, which comprises interface elements and user elements, on a user computer, and of a computer structure which has a first computer, which is set up in such a manner that the interface elements can be managed centrally, and a second computer, which is set up in such a manner that the user elements can be defined,
- in which the user computer and the computer structure are connected to one another,
- in which the user computer is set up in such a manner that the service can be requested,
- in which the first computer is set up in such a manner that the interface elements can be

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transmitted from the first computer to the user computer, and

- in which the user computer can then be set up in such a manner that, during operation of the service, only the user elements are transmitted between the second computer and the user computer.

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9. An arrangement for installation and for operation of a service, which comprises interface elements and user elements, on a user computer, and of a computer structure which has a first computer, which is set up in such a manner that the interface elements can be managed centrally, and a second computer, which is set up in such a manner that the user elements can be defined,
   - in which the user computer and the computer structure are connected to one another,
   - in which the user computer is set up in such a manner that the service can be requested,
   - in which the first computer is set up in such a manner that the interface elements can be transmitted from the first computer to the user computer, and
   - in which the user computer can then be set up in such a manner that, during operation of the service, only the user elements are transmitted between the second computer and the user computer.

10. An arrangement as claimed in claim 8 or 9, in which an interface element is a Graphical User Interface (GUI) object.

11. An arrangement as claimed in one of claims 8 to 10, in which the first computer is connected both to the user computer and to the second computer.

12. The arrangement as claimed in one of claims 8 to 11, in which the user computer is a mobile telephone.

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13. An arrangement as claimed in one of claims 8 to 12,
used in a traffic information system.

14. The arrangement as claimed in claim 13,
used in a Personal Travel Assistant (PTA).

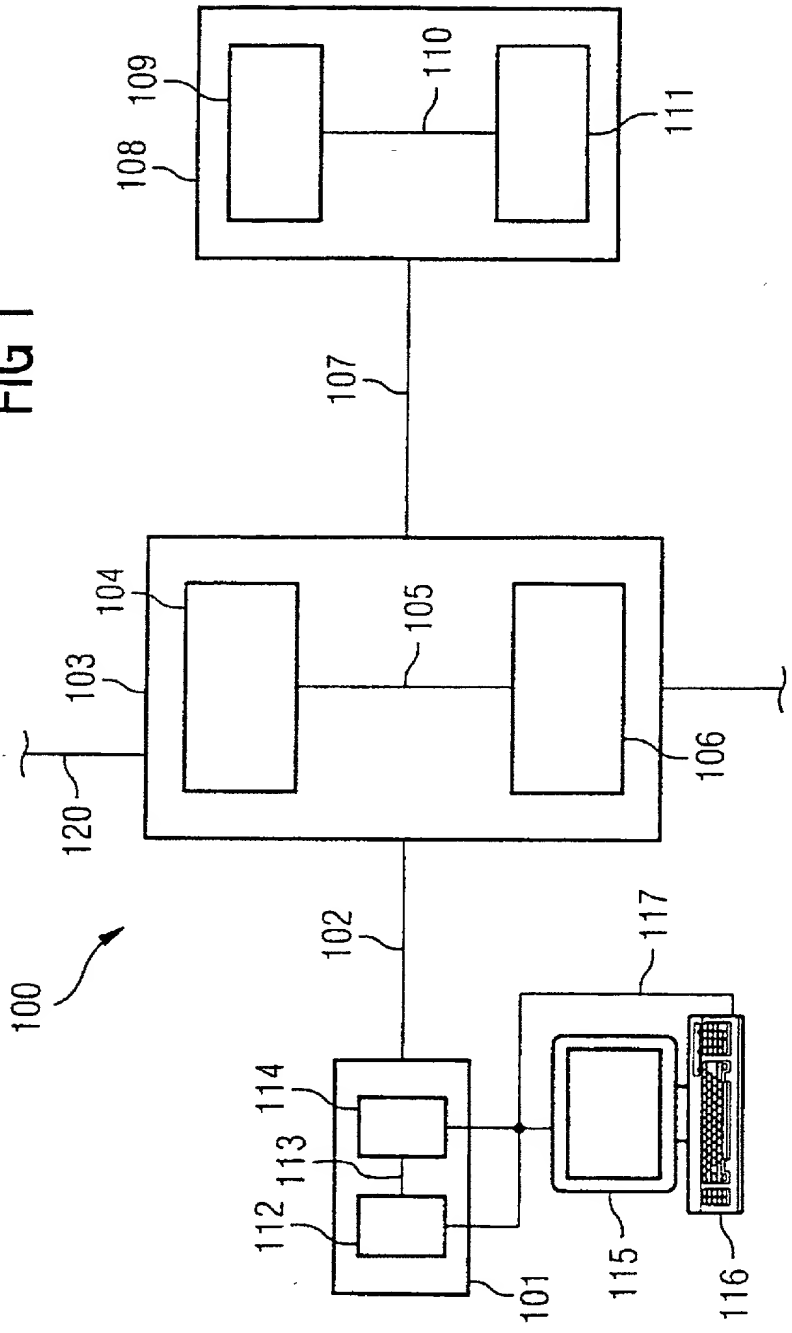
Abstract

Method and arrangement for installation, and a method and arrangement for installation and for operation, of a service requested by a user computer

In a method and an arrangement for installation and for operation of a service, which is requested by a user computer and comprises interface elements and user elements, on the user computer and of a computer structure which has a first computer, which manages the interface elements, and a second computer, which defines the user elements, the user computer and the computer structure are connected to one another. The interface elements are then transmitted from the first computer to the user computer. The first computer is then set up in such a manner that the first computer transmits the user elements between the second computer and the user computer. During operation of the service, only the user elements are transmitted between the second computer and the user computer.

Figure 2

FIG 1


100
101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
120

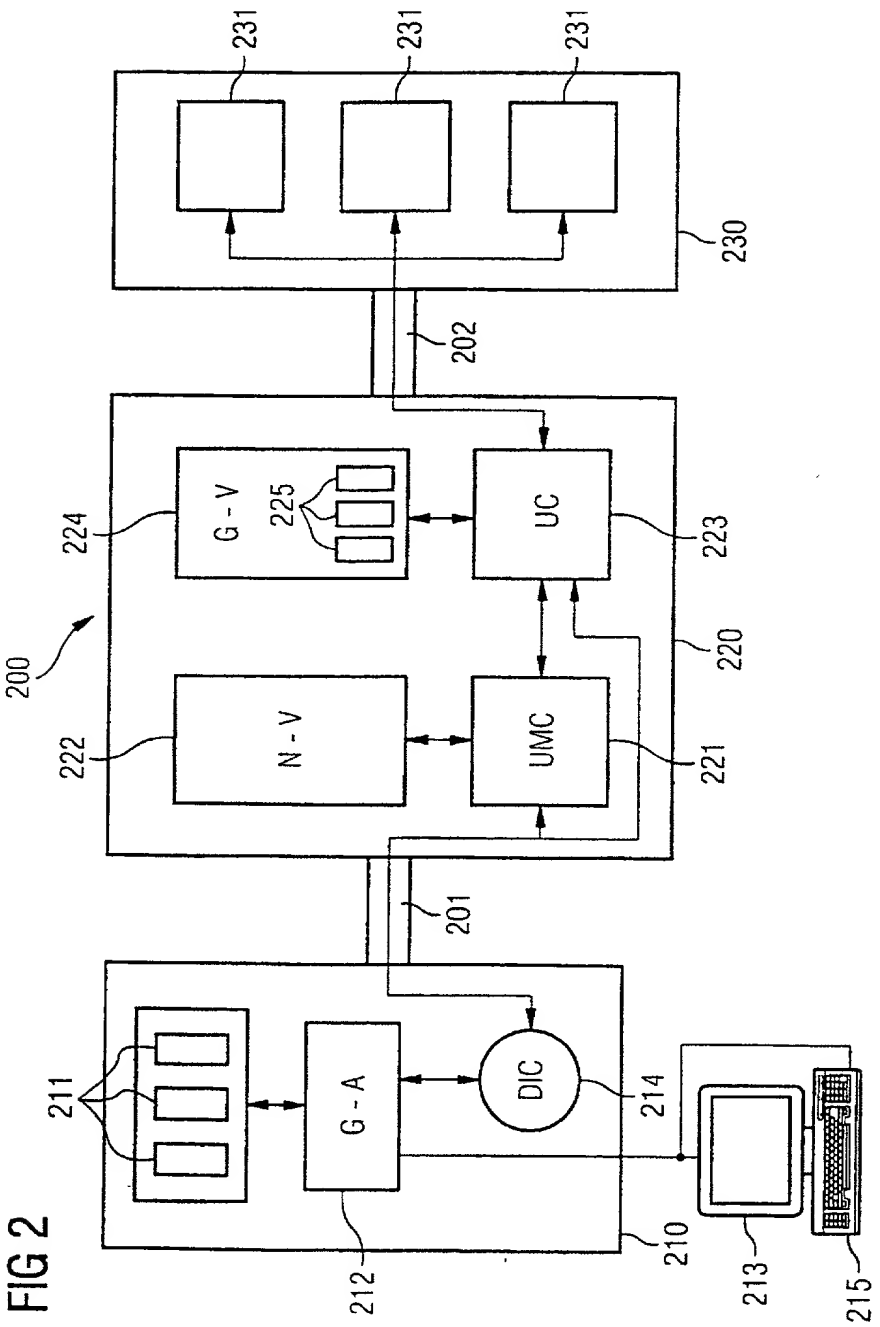
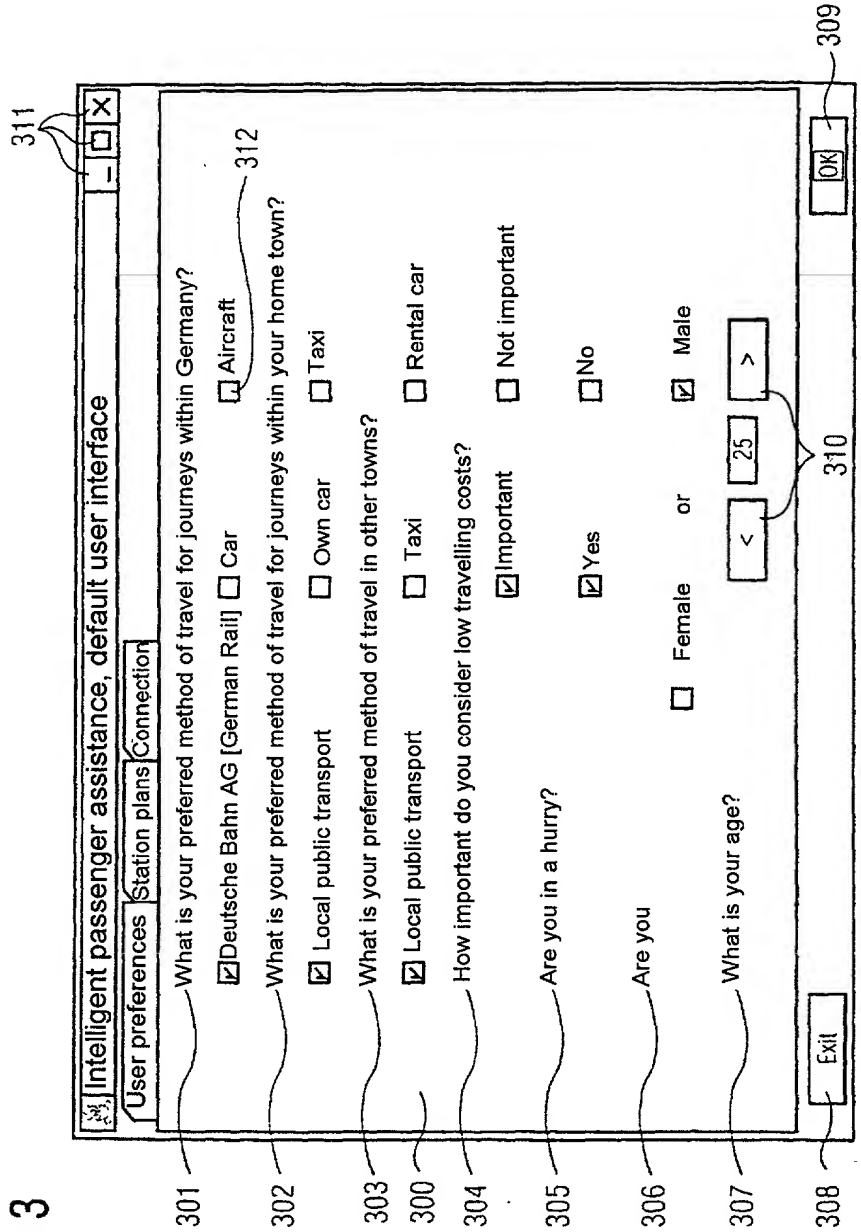

231
231
231
230
202
G - V
225
224
UC
223
200
220
N - V
222
UMC
221
201
211
G - A
DIC
214
212
210
213
215

FIG 2

FIG 3


311
Intelligent passenger assistance, default user interface
User preferences
Station plans
Connection
What is your preferred method of travel for journeys within Germany?
Deutsche Bahn AG [German Rail]
Car
Aircraft
312
What is your preferred method of travel for journeys within your home town?
Local public transport
Own car
Taxi
What is your preferred method of travel in other towns?
Local public transport
Taxi
Rental car
How important do you consider low travelling costs?
Important
Not important
Are you in a hurry?
Yes
No
Are you
Female
or
Male
What is your age?
<
25
>
310
Exit
OK
309
301
302
303
300
304
305
306
307
308

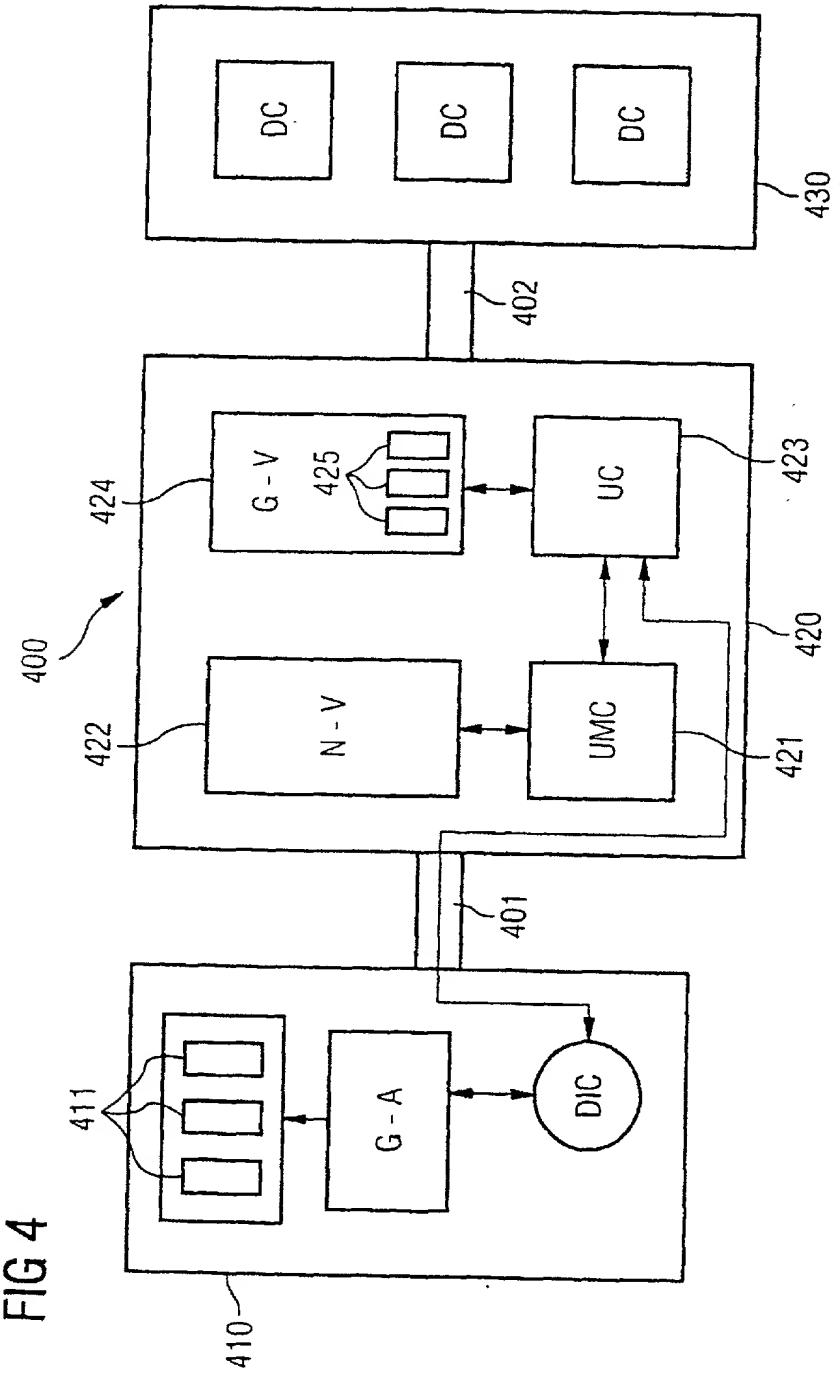

DC
DC
DC
430
402
400
424
G - V
425
UC
423
420
422
N - V
UMC
421
401
411
G - A
DIC
410

FIG 4

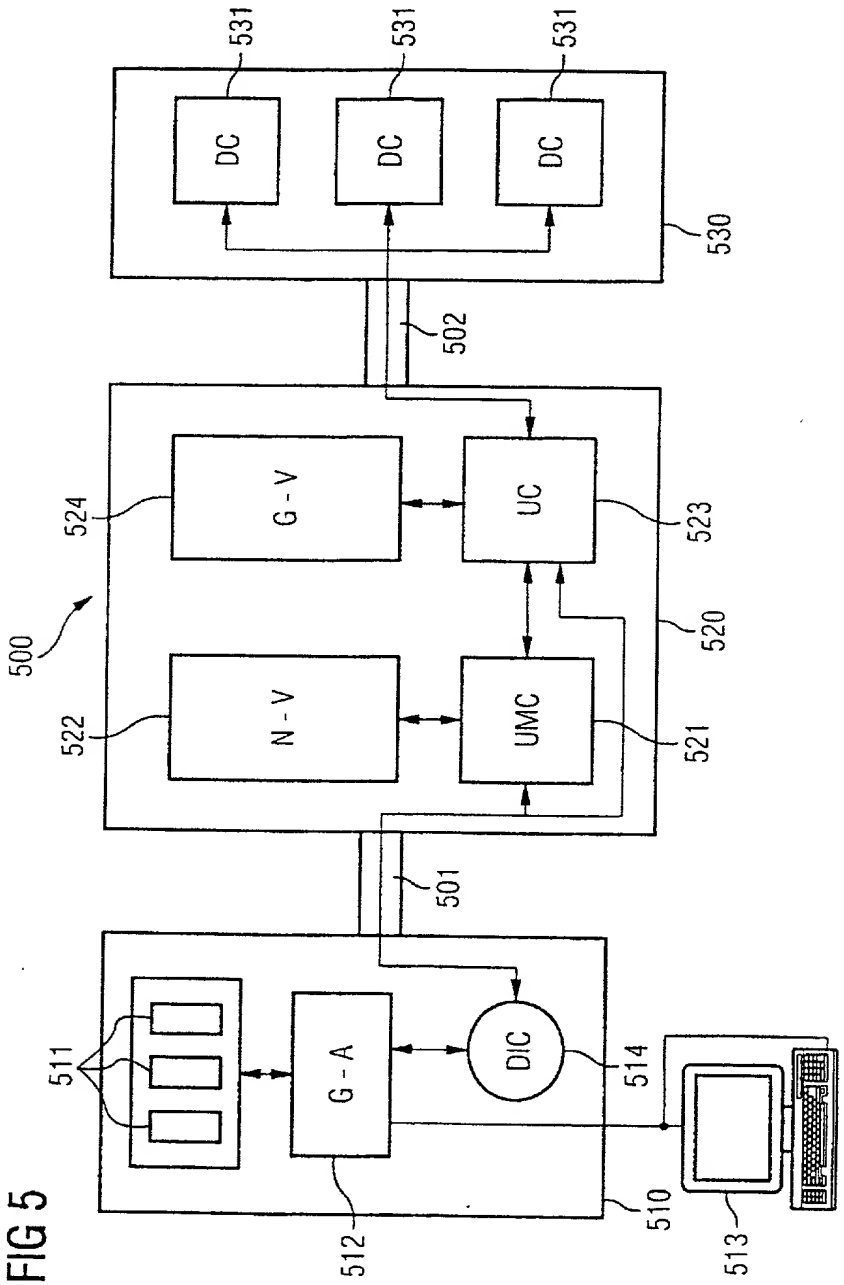

531
531
531
DC
DC
DC
530
502
524
G - V
UC
523
500
520
522
N - V
UMC
521
501
511
G - A
DIC
514
512
510
513

FIG 5

SUBSTITUTE SPECIFICATION

TITLE OF THE INVENTION

METHOD AND DEVICE FOR INSTALLING AND METHOD AND DEVICE FOR INSTALLING AND OPERATING A SERVICE REQUESTED BY A USER COMPUTER

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] This application is based on and hereby claims priority to PCT Application No. PCT/DE00/00610 filed on March 1, 2000 and German Application No. 199 13 094.9 filed on March 23, 1999 in Germany, the contents of which are hereby incorporated by reference.

BACKGROUND OF THE INVENTION

[0002] The invention relates to a method and a device for installation, and a method and a device for installation and for operation, of a service, which is requested by a user computer and comprises interface elements and user elements, on the user computer, and of a computer structure.

[0003] In general, data is transmitted between computers that are connected to one another, in methods and devices such as these.

[0004] Principles of the World-Wide-Web (WWW) available on March 16, 1999, at: http://www.w3.org/ discloses a device for transmitting data between computers which are connected to one another.

[0005] The components of this device are parts of a communications network, referred to as the World-Wide-Web (WWW).

[0006] The communications network connects individual computers to one another in such a manner that these computers can interchange data in accordance with a predetermined transmission protocol, the "Transmission Control Protocol (TCP)/Internet Protocol (IP)". In order to allow data to be processed in a standard manner, much of the data is in a standard format, referred to as the Hyper-Text-Markup-Language format (HTML format).

[0007] Furthermore, suitable software for processing the data, such as a WWW-Browser, is installed on each individual computer.

[0008] Data transmitted in such a way may comprise image data, text data or multimedia data.

[0009] Furthermore, data such as this can be transmitted as part of a service which a computer can request in the communications network. One such service is, for example, provision of information.

[0010] In this case, the computer which requests the service in the communications network is referred to as the user computer or client. A computer which provides a service or information in the communications network is referred to as a server. The server may also be a computer structure which comprises individual computers connected to one another.

[0011] Within a service, the client or user computer can request the service from the server or computer structure via the communications network. During operation of the service, data is transmitted between the client and the server via the communications network.

[0012] The transmitted data comprises interface elements and user elements.

[0013] The expression interface elements means data which is required for transmitting the user elements between two computers, for example data relating to the definition of an interface between the two computers, or for processing or displaying the user elements by a computer, for example formatting information.

[0014] The expression user elements means data containing only the information requested within the service. The user elements also include any control characters.

[0015] This known device has the disadvantage that the information content of the data including both interface elements and user elements is low.

[0016] Furthermore, the known device has, in particular, the disadvantage that the amount of data transmitted within a service may be so great that rapid information interchange between the corresponding service provider and the corresponding user is impossible.

[0017] Particularly when transmitting data using the HTML format, information, for example formatting information, is transmitted which is not required for the purposes of the request by the respective user.

SUMMARY OF THE INVENTION

[0018] One aspect of the invention is thus based on the problem of specifying a device for operation of a service on computers which are connected to one another, in which the amount

of data which is transmitted within the service is comparatively small and can thus be transmitted quickly, and which device is not subject to the disadvantages of the known devices.

[0019] Furthermore, one aspect of the invention is based on the problem of specifying a method for operation of a service on computers which are connected to one another, in which the amount of data transmitted within the service is small, and the amount of data can thus be transmitted more quickly than when using known methods.

[0020] In the case of a method for installation of a service, which is requested by a user computer and comprises interface elements and user elements, on the user computer, and of a computer structure, which has a first computer which manages the interface elements and a second computer which defines the user elements, the user computer and the computer structure are connected to one another. The interface elements are then transmitted from the first computer to the user computer. The first computer is then set up in such a manner that the first computer transmits the user elements between the second computer and the user computer.

[0021] In the case of a method for installation and for operation of a service, which is requested by a user computer and comprises interface elements and user elements, on the user computer, and of a computer structure, which has a first computer which manages the interface elements and a second computer which defines the user elements, the user computer and the computer structure are connected to one another. The interface elements are then transmitted from the first computer to the user computer. The first computer is then set up in such a manner that the first computer transmits the user elements between the second computer and the user computer. During operation of the service, only the user elements are transmitted between the second computer and the user computer.

[0022] In a device for installation of a service, which is requested by a user computer and comprises interface elements and user elements, on the user computer, and of a computer structure which has a first computer, which is set up in such a manner that the interface elements can be managed, and has a second computer which is set up in such a manner that the user elements can be defined, the user computer and the computer structure are connected to one another. Furthermore, the first computer is set up in such a manner that the interface elements can be transmitted from the first computer to the user computer. The user computer

can then be set up in such a manner that the user elements can be transmitted between the second computer and the user computer.

[0023] In a device for installation and for operation of a service, which is requested by a user computer and comprises interface elements and user elements, on the user computer, and of a computer structure which has a first computer, which is set up in such a manner that the interface elements can be managed, and has a second computer which is set up in such a manner that the user elements can be defined, the user computer and the computer structure are connected to one another. Furthermore, the first computer is set up in such a manner that the interface elements can be transmitted from the first computer to the user computer. The user computer is then set up in such a manner that only the user elements can be transmitted between the second computer and the user computer.

[0024] The devices are particularly suitable for carrying out the methods according to one aspect of the invention, or one of their developments which are explained in the following text.

[0025] The particular advantage of the invention is that only user elements are transmitted during operation of a service. This allows the maximum possible data transmission rate between computers which are connected to one another to be utilized extremely effectively.

[0026] This is possible in particular because, during the installation of a service, those interface elements which are associated with the service are transmitted to the user computer and are available there, for example by being stored in the user computer. Only the user elements are then transmitted to the user computer during operation of the services. The user elements can be processed using the interface elements which are available in the user computer.

[0027] The user elements include all the control characters.

[0028] An interface element is preferably what is referred to as a Graphical User Interface (GUI) object.

[0029] In one development, the first computer is connected both to the user computer and to the second computer. In a structure of computers which are connected to one another such as this, the first computer carries out the function of a service administrator or service manager.

[0030] The user computer is preferably a mobile terminal, for example a mobile telephone. This also allows relatively large amounts of data, such as text data, to be transmitted to the mobile terminal.

[0031] In developments, methods and devices are used for an information system, for example a travel information system.

[0032] The methods and devices are preferably used for what is referred to as a Personal Travel Assistant (PTA). This makes it possible, within a service, to transmit to a user travel information such as a departure time or arrival time of some public transport, or a transport delay message.

BRIEF DESCRIPTION OF THE DRAWINGS

[0033] These and other objects and advantages of the present invention will become more apparent and more readily appreciated from the following description of the preferred embodiments, taken in conjunction with the accompanying drawings of which:

Fig. 1 shows a structure for a service system in a communications network;

Fig. 2 shows components of a service system in a communications network;

Fig. 3 shows an example of a local GUI element;

Fig. 4 shows a sketch describing processes during installation of the service system;

Fig. 5 shows a sketch describing processes during operation of the service system.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0034] Reference will now be made in detail to the preferred embodiments of the present invention, examples of which are illustrated in the accompanying drawings, wherein like reference numerals refer to like elements throughout.

Exemplary embodiment: Personal Travel Assistant (PTA)

[0035] Fig. 1 shows, schematically, the structure of a service system 100 in a communications network 120 in which individual computers are connected by connections via which data can be transmitted.

[0036] The service system 100 illustrated in Fig. 1 is a travel information system, referred to as a Personal Travel Assistant (PTA), by which various services, such as services for defining travel information, can be made available to a user. Such travel information may be, for

example, a departure time and an arrival time of a traffic connection between two locations which may be selected freely by the user. Such information is referred to in the following text as user information.

[0037] The user is linked to the communications network 120 by a communication terminal 101, such as a telephone or a computer. A service manager is connected to the user via a first data line 102, which links the communication terminal 101 to a first computer 103. Data is transmitted via the first data line 102 between the communication terminal 101 and the first computer 103, or between the user and the manager in the communication network 120. Furthermore, the communication terminal 101 has a processor 112 and a memory 114, which is linked to the processor 112 via a bus 113. Suitable software for processing the transmitted data is stored in the memory 114. During data processing, the software is loaded from the memory 114, and is run by the processor 112. Furthermore, the communication terminal 101 has a screen 115 and an input keyboard or keypad 116. The screen 115 and the keyboard or keypad 116 are connected via a bus 117 to the processor 112 and to the memory 114 in such a manner that signals can be transmitted.

[0038] The first computer 103 likewise has a processor 104 and a memory 106 which is connected to the processor 104 via a bus 105. A service is managed in the communications network 120 by the manager or first computer 103, using software which is stored in the memory 106 and is run on the processor 104.

[0039] The manager is connected to a service provider in the communications network 120 via a second line 107, which connects the first computer 103 to a second computer 108. The second computer 108 likewise has a processor 109 and a memory 111, which is connected to the processor 109 via a bus 110.

[0040] Data is transmitted via the second data line 107 between the first computer 103 and the second computer 108, or between the manager and the service provider.

[0041] A service offered by the service provider, such as the provision of information in the communications network 120, is provided using software which is stored in the memory 111 of the second computer 108, and is run by the processor 109 in the second computer 108.

[0042] Fig. 1 illustrates only one user 101 and one service provider 108, in order to illustrate the structure of the service system 100. This clearly shows that a service system may have a

number of service providers, who each provide a service, which may itself comprise a number of individual services, in the communications network and are each connected via a data line to the manager. Likewise, a number of users, who are each connected to the manager via a data line, can be included in the communications network 120. In this case, the first computer 103 or the manager in each case coordinates and monitors data transmission between one user and one service provider.

[0043] Functional and structural components of the service system 100 illustrated in Fig. 1 are described in more detail in the following text and figures.

[0044] The functional components are run as autonomous application programs or as programmed code in a higher-level application program.

[0045] Fig. 2 shows components of the user or communication terminal 210, components of the manager or first computer 220 and components of the service provider or second computer 230.

[0046] The arrows shown in Fig. 2 each indicate a connection between two components, via which connection data can be transmitted. One arrow direction in each case indicates the direction in which data is transmitted between the two components.

[0047] Fig. 2 shows the components of the user or communication terminal 210, referred to as local screen interface elements (locally Graphical User Interface (local GUI elements)) 211, what is referred to as a Graphical User Interface (GUI) - application 212, and what is referred to as a communication terminal interface (Device Interface Component (DIC)) 214.

[0048] In this case, the meanings of the components mentioned above are as follows:

[0049] **Local GUI element 211**: Local GUI elements 211 are screen interface elements which are managed by the manager or first computer 220 and are transmitted to the communication terminal 210 during installation of the service system 200, and are then stored in the memory of the communication terminal 210. A local GUI element 211 is in each case associated with the service (job) which is offered within the service system 200. The local GUI elements 211 are managed by the GUI application 212.

[0050] Fig. 3 shows such a local GUI element, an input mask 300, which can be displayed on the screen 213 of the communication terminal 210, and can be actioned by the user by the input keyboard or keypad 215.

[0051] The user uses the input mask 300 to define a job which he would like the service system 200 to carry out. To do this, the user specifies the job by entering details which describe the job into the communication terminal 210.

[0052] In the input mask 300 shown in Fig. 3, the job, determination of a means of transport, is described by details comprising the locally and regionally preferred means of transport 301, 302, 303, the significance of travel costs 304, the importance of time 305, and personal details 306, 307.

[0053] Furthermore, the input mask 300 illustrated in Fig. 3 has what are referred to as control buttons 308, 309, 310, 311, 312, which are used to create the entry in the input mask 300.

[0054] **GUI application 212**: The GUI application 212 is an application program, for example an application program programmed in the programming language Java, which is stored in the memory of a communication terminal 210 and is run by the processor in the communication terminal 210. The GUI application 212 manages the local GUI elements 211. The user can use the GUI application 212 to request a service from the service system 200. In the process, the GUI application 200 activates the local GUI elements 211 associated with that service.

[0055] **DIC 213**: The DIC 213 is an interface between the communication terminal 210 and the first computer 220, and is used for monitoring and carrying out the data interchange between the communication terminal 210 and the first computer 220. The DIC 213 communicates with a component in the manager 220, referred to as a User Management Component (UMC) 221, and a component of the manager 220, referred to as a User Component (UC) 223, and the GUI application 212 using defined protocols.

[0056] Furthermore, Fig. 2, shows the components of the manager 220 and of the first computer 220, the UMC 221, the UC 223, what is referred to as a GUI directory 224, and what is referred to as a user directory 222.

[0057] In this case, the meanings of the components mentioned above are as follows:

[0058] **User directory 222**: The user directory 222 contains information about a user of the service system 200, or information about a number of users of the service system 200, which or who is or are authorized to use the service system 200. The information in each case includes,

for example, a user name for a user, an associated password and a user profile. The user directory 222 and the UMC 221 are used to monitor access by a user to the service system 200.

[0059] **UMC 221**: The UMC 221 is required to register a user in the service system 200. The UMC 221 uses the user directory 222 to monitor a registration attempt by a user, and checks the access authorization of that user 210. If such a user has access authorization, the UMC 221 starts the UC 223. If a user 210 has no such authorization, the UCM 221 prevents the user from having access to the service system 200.

[0060] **GUI directory 224**: The GUI directory 224 contains information about screen interfaces for the services for the service system 200. This information in each case includes a name and an identification of the service, as well as the screen interface elements 225 associated with that service. The manager or first computer 220 manages the screen interface elements 225 using the GUI directory 224 and the UC 223.

[0061] **UC 223**: The UC 223 contains information about the individual services for the service system 200, and an association between screen interface elements 225 and the service.

[0062] Furthermore, Fig. 2 shows components of the service provider or of the second computer 230, referred to as service components DC 231.

[0063] In this case, the meanings of the components mentioned above are as follows:

[0064] **DC 231**: A DC 231 is in each case an application program, for example an application program programmed in the programming language Java, by which one service is in each case carried out in the service system. The DC 231 are stored in the memory of the second computer 230, and are each run by the processor in the second computer 230. One DC 231 is in each case activated by the UC 222.

[0065] The service provider 230 uses a DC 231 to define user information associated with a job defined by a user 210.

[0066] In the following text, Fig. 4 will be used to describe installation of the service system, and Fig. 5 will be used to describe operation of the service system, and updating of the service system, in more detail.

[0067] Components from Fig. 4 and Fig. 5 are provided with the same reference symbols as in Fig. 2, where they relate to the same configuration.

[0068] The arrows illustrated in Fig. 4 and Fig. 5 each indicate a connection between two components, via which connection data can be transmitted. One arrow direction in each case indicates the direction in which data is transmitted between the two components.

Installation of the service system (Fig. 4)

[0069] The expression installation of the service system for a user relates to the procedures which are carried out before a service system is first used.

[0070] During the installation of the service system 400 for a user, the user or the communication terminal 410, the manager or first computer 420 and the service provider or second computer 430 are connected to one another via data lines 401, 402.

[0071] The data lines 401, 402 may be variable or fixed data lines, with fixed data lines being activated for data transmission during the installation process.

[0072] During the installation of the service system 400, the user requests a service from the service system 400 for the first time (initial registration). In the process, the user starts the GUI application 412. The GUI application transmits request data to the UMC 421.

[0073] During the installation process, which is monitored by the UMC 421, the user's initial registration is carried out by storing information relating to the user in the user directory 422. In the process, the authorized services which the user can use in the service system 400 are defined. User access to an authorized service is protected by a password, which is stored in the user directory 422.

[0074] The UMC 421 starts the UC 423. The UC 423 uses the GUI directory 424 for the authorized services to determine the associated screen interface elements 425. The determined screen interface elements 425 are transmitted to the user or to the communication terminal 410, and are stored as local GUI elements 411 in the memory of the communication terminal 410.

[0075] Once these procedures have been carried out, the user or the communication terminal 410 is now set up so that only user information need be transmitted during operation of the service system.

Operation of the service system (Fig. 5)

[0076] The expression operation of the service system by a user refers to the procedures which take place when using a service in the service system.

[0077] During operation of the service system 500, the user or the communication terminal 510, the manager or the first computer 520 and the service provider or the second computer 530 are connected to one another via data lines 501, 502.

[0078] The data lines 501, 502 may be variable or fixed data lines, which fixed data lines are activated for data transmission during operation.

[0079] During operation of the service system 500, the user requests a service from the service system 500 by starting the GUI application 512. The user uses the GUI application 512 to select a desired service. The local GUI elements 511 associated with that service are loaded from the memory of the communication terminal 510, and are displayed on the screen 513 of the communication terminal 510.

[0080] The user then registers for this service. In the process, data which includes a password for that user, is transmitted from the GUI application 512 via the DIC 514 to the UMC 521. The UMC 521 uses the user directory 522 to check the user's access authorization for the desired service. If the user has authorization, the UMC 521 starts the UC 523. The UC 523 activates the appropriate DC 531 for the service provider 530. If a user has no such authorization, the UCM 521 prevents that user from accessing the service provider 530.

[0081] Furthermore, the user defines a desired job by the loaded local screen interface elements 511, with the job data being determined.

[0082] If the user has authorization for that service, the job data is transmitted to the UC 523. The UC 523 transmits the job data on to the corresponding DC 531 of the service provider 530. The DC 531 uses the data to determine user information, and transmits the user information to the UC 523. The UC 523 transmits the user information on to the GUI application 512. The GUI application 512 displays the user information, using the loaded GUI elements 511, on the screen 513 of the communication terminal 510.

Updating of the service system

[0083] The service system is updated when a new service is available in the service system (new implementation) or an already available service is modified (update).

New implementation

[0084] When a service is newly implemented, a new DC is linked to the service system in a corresponding manner to the already existing DCs. New screen interface elements associated with the new service are stored in the GUI directory. The GUI directory and the UC are matched to one another as appropriate.

[0085] The user directory and the UMC are matched to the new service, in terms of the user's access authorization.

[0086] Furthermore, during user registration, the user is informed by the manager that the new service is available in the service system. In a corresponding manner to the installation of the service system, the new screen interface elements associated with the new service are transmitted to the user or to the communication terminal, and are stored as new local GUI elements in the memory of that communication terminal. The GUI application is adapted as appropriate.

[0087] Once these procedures have been carried out, the user can use the new service. The principle of the service system remains unchanged in the new implementation.

Update

[0088] When a service is updated, the old DC carrying out the service is replaced by an updated DC. The old screen interface elements which are associated with the old DC and are managed by the manager are replaced by updated screen interface elements. The GUI directory and UC are adapted as appropriate.

[0089] Furthermore, during user registration, the user is informed by the manager that the updated service is available in the service system. In a corresponding manner to the installation of the service system, the updated screen interface elements associated with the updated service are transmitted to the user or to the communication terminal. The old local GUI elements associated with the old service are replaced by updated local GUI elements such that the updated screen interface elements are stored in the memory of the communication terminal as the updated local GUI element, instead of the old local GUI elements. The GUI application is adapted as appropriate.

[0090] Once these procedures have been carried out, the user can use the updated service. The principle of the service system remains unchanged in the update.

[0091] The invention has been described in detail with particular reference to preferred embodiments thereof and examples, but it will be understood that variations and modifications can be effected within the spirit and scope of the invention.

DOCKET NO. 1454.1089

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:

Bernhard BAUER et al.

Serial No: NEW

Group Art Unit: To be assigned

Confirmation No.

Filed: September 24, 2001

Examiner: To be assigned

For: METHOD AND DEVICE FOR INSTALLING AND METHOD AND DEVICE FOR INSTALLING AND OPERATING A SERVICE REQUESTED BY A USER COMPUTER

LETTER TO THE EXAMINER REQUESTING APPROVAL OF CHANGES TO THE DRAWINGS

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

It is respectfully requested that the Examiner approve the changes shown in red on the attached copies of Figs. 1 and 2.

Respectfully submitted,

STAAS & HALSEY LLP

Date: Sept. 24, 2001

By: _____
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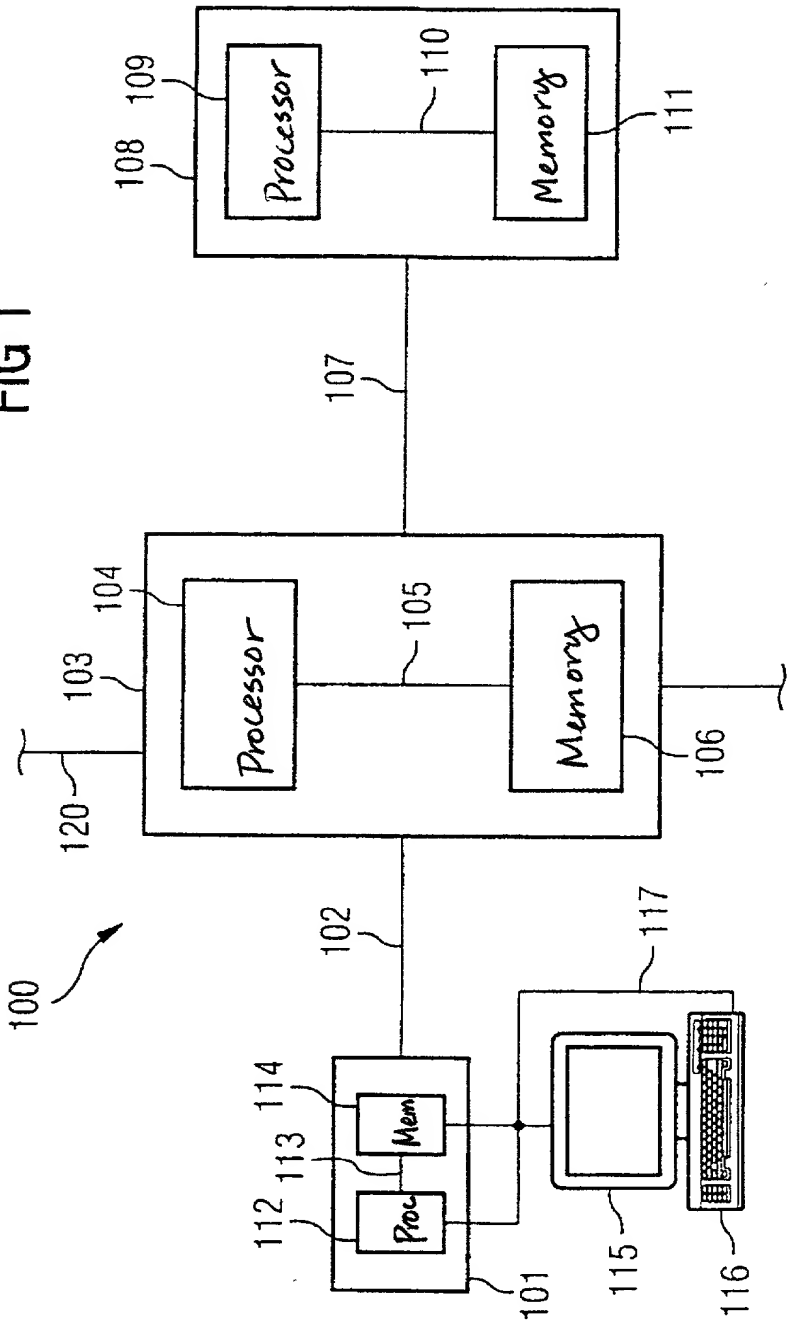
FIG 1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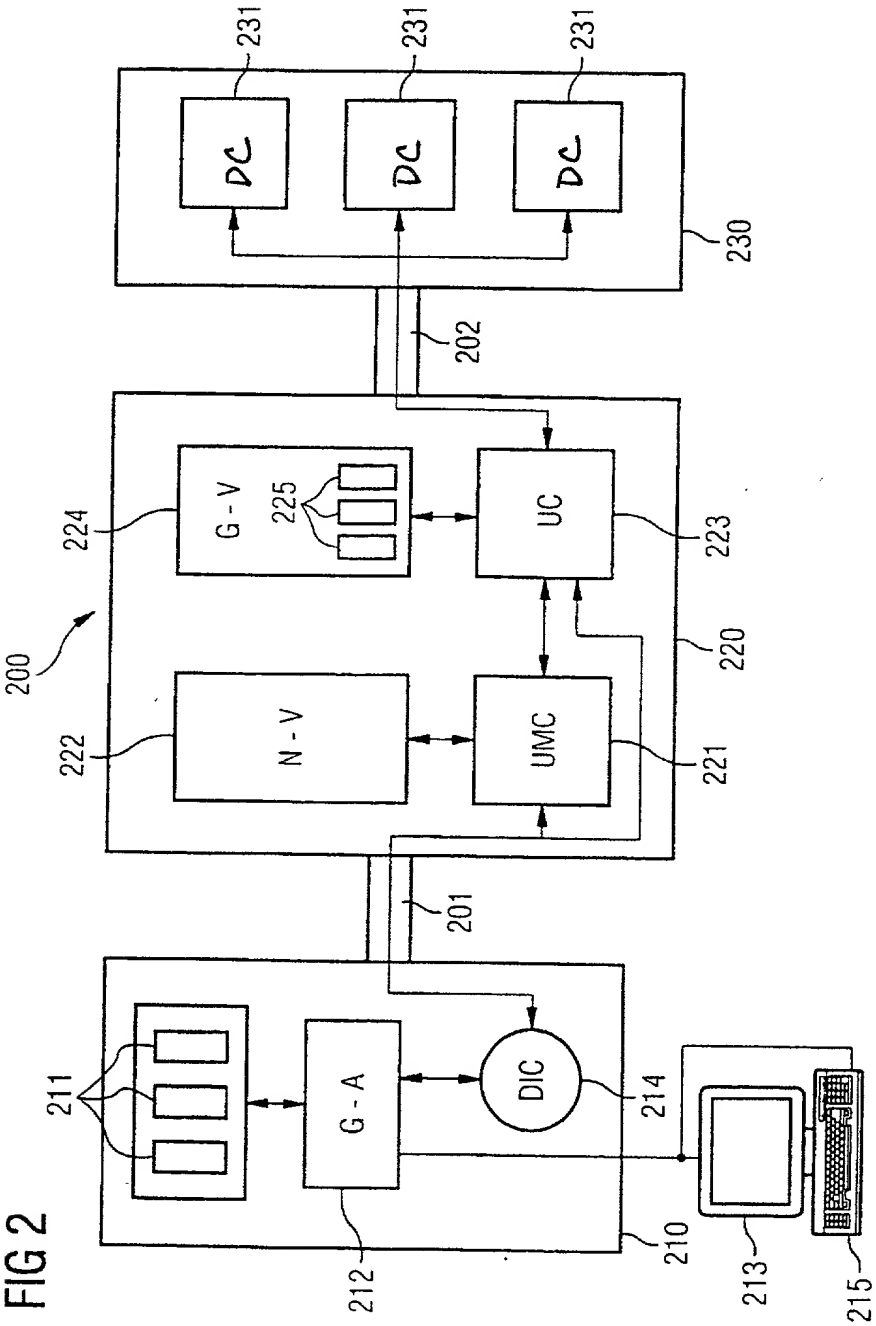
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FIG 2

Declaration and Power of Attorney For Patent Application
Erklärung Für Patentanmeldungen Mit Vollmacht
German Language Declaration

Als nachstehend benannter Erfinder erkläre ich hiermit an Eides Statt:

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dass ich, nach bestem Wissen der ursprüngliche, erste und alleinige Erfinder (falls nachstehend nur ein Name angegeben ist) oder ein ursprünglicher, erster und Miterfinder (falls nachstehend mehrere Namen aufgeführt sind) des Gegenstandes bin, für den dieser Antrag gestellt wird und für den ein Patent beantragt wird für die Erfindung mit dem Titel:

Verfahren und Anordnung zur Installation und Verfahren und Anordnung zur Installation und zum Betreiben eines von einem Nutzerrechner angeforderten Dienstes

deren Beschreibung

(zutreffendes ankreuzen)
☐ hier beigefügt ist.
☒ am 01.03.2000 als
PCT internationale Anmeldung
PCT Anmeldungsnummer PCT/DE00/00610
eingereicht wurde und am _____
abgeändert wurde (falls tatsächlich abgeändert).

Ich bestätige hiermit, dass ich den Inhalt der obigen Patentanmeldung einschliesslich der Ansprüche durchgesehen und verstanden habe, die eventuell durch einen Zusatzantrag wie oben erwähnt abgeändert wurde.

Ich erkenne meine Pflicht zur Offenbarung irgendwelcher Informationen, die für die Prüfung der vorliegenden Anmeldung in Einklang mit Absatz 37, Bundesgesetzbuch, Paragraph 1.56(a) von Wichtigkeit sind, an.

Ich beanspruche hiermit ausländische Prioritätsvorteile gemäss Abschnitt 35 der Zivilprozessordnung der Vereinigten Staaten, Paragraph 119 aller unten angegebenen Auslandsanmeldungen für ein Patent oder eine Erfindersurkunde, und habe auch alle Auslandsanmeldungen für ein Patent oder eine Erfindersurkunde nachstehend gekennzeichnet, die ein Anmeldedatum haben, das vor dem Anmeldedatum der Anmeldung liegt, für die Priorität beansprucht wird.

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

Method and device for installing and method and device for installing and operating a service requested by a user computer

the specification of which

(check one)
☐ is attached hereto.
☒ was filed on 01.03.2000 as
PCT international application
PCT Application No. PCT/DE00/00610
and was amended on _____
(if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, §1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

German Language Declaration

Prior foreign appplications
Priorität beansprucht

			Priority Claimed	
19913094.9	DE	23.03.1999	☒	☐
(Number) (Nummer)	(Country) (Land)	(Day Month Year Filed) (Tag Monat Jahr eingereicht)	Yes Ja	No Nein
			☐	☐
(Number) (Nummer)	(Country) (Land)	(Day Month Year Filed) (Tag Monat Jahr eingereicht)	Yes Ja	No Nein
			☐	☐
(Number) (Nummer)	(Country) (Land)	(Day Month Year Filed) (Tag Monat Jahr eingereicht)	Yes Ja	No Nein

Ich beanspruche hiermit gemäss Absatz 35 der Zivilprozessordnung der Vereinigten Staaten, Paragraph 120, den Vorzug aller unten aufgeführten Anmeldungen und falls der Gegenstand aus jedem Anspruch dieser Anmeldung nicht in einer früheren amerikanischen Patentanmeldung laut dem ersten Paragraphen des Absatzes 35 der Zivilprozeßordnung der Vereinigten Staaten, Paragraph 122 offenbart ist, erkenne ich gemäss Absatz 37, Bundesgesetzbuch, Paragraph 1.56(a) meine Pflicht zur Offenbarung von Informationen an, die zwischen dem Anmeldedatum der früheren Anmeldung und dem nationalen oder PCT internationalen Anmeldedatum dieser Anmeldung bekannt geworden sind.

I hereby claim the benefit under Title 35. United States Code. §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §122, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occured between the filing date of the prior application and the national or PCT international filing date of this application.

PCT/DE00/00610 (Application Serial No.) (Anmeldeseriennummer)	01.03.2000 (Filing Date D, M, Y) (Anmeldedatum T, M, J)	anhängig (Status) (patentiert, anhängig, aufgegeben)	pending (Status) (patented, pending, abandoned)
_____ (Application Serial No.) (Anmeldeseriennummer)	(Filing Date D,M,Y) (Anmeldedatum T, M; J)	_____ (Status) (patentiert, anhängig, aufgeben)	(Status) (patented, pending, abandoned)

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

German Language Declaration

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POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. *(list name and registration number)*

And I hereby appoint

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Unterschrift des Erfinders / Datum	Inventor's signature / Date
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Wohnsitz	Residence
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Staatsangehörigkeit	Citizenship
DE	DE
Postanschrift	Post Office Addess
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82024 TAUFKIRCHEN	82024 TAUFKIRCHEN
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Unterschrift des Erfinders / Datum	Second Inventor's signature / Date
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Wohnsitz	Residence
ECHING, DEUTSCHLAND	ECHING, GERMANY DEX
Staatsangehörigkeit	Citizenship
DE	DE
Postanschrift	Post Office Address
RAIFFEISENSTRASSE 4	RAIFFEISENSTRASSE 4
85386 ECHING	85386 ECHING

(Bitte entsprechende Informationen und Unterschriften im Falle von dritten und weiteren Miterfindern angeben).

(Supply similar information and signature for third and subsequent joint inventors).

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